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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,094	01/12/2001	Jens Baltersee	2-2-2	1665
24490	7590	08/09/2005	EXAMINER	
LAW OFFICES OF NAREN CHAGANTI 432 S. CURSON AVE, STE. 12H LOS ANGELES, CA 90036			CORRIELUS, JEAN B	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/760,094

Applicant(s)

BALTERSEE ET AL.

Examiner

Jean B. Corrielus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-25 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1-25 are objected to because of the following informalities: claim 1, before step (g) a limitation such as "wherein step (f) comprising:" should be inserted; step (f), what does it mean by "reducing the interference of at least one other (...) than the signal component ..."? Claim 2, what does it mean by "S-curve"; lines 7-8, what does it mean by "at estimated correct location"? Claim 3, line 2, "subtraction" should be "subtracting". Claim 16, line 7, "an of" should be deleted; last line "." Should be inserted. Note that any claim whose base claim is objected is likewise objected. Appropriate correction is required.

Specification

2. The disclosure is objected to because of the following informalities: please remove reference to the claim in the specification. See for instance page 5, lines 16-19. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "the total weight interfering path" lacks of proper antecedent basis.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the fingers (1, 2,... N) as recited in claims 1 and 16, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 3-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al Patent No. US 6,154,443 in view of Popovic Patent No. US 6,567,482.

Huang et al discloses a method and apparatus comprising (a) receiving of an electromagnetic signal being a superposition of a plurality of signal components of different signal paths (i), see col.1, lines 22-29 and fig. 1B

(b) digitizing the received signal see A/D converter 46 (c) distributing the digitized signal to receiver fingers 50 each of which is assigned to one signal path; reducing the interference of at least one other than the signal component of the assigned signal path J with the signal component of the assigned signal path I in at least one of the receiver fingers see summer 124 and 166; calculating the interference contribution of finger J in finger I see summer 122 and 164 and subtracting the interference contribution of the at least one other finger from an intermediate signal.

however, Huang et al does not teach that the digitized signal is provided to a synchronization and detection device (stream) and it further fail to teach that the decorrelating the digitized signal by a code sequence. Popovic discloses (fig. 3) the further limitations of providing the digitized signal to a synchronization and detection device (stream) (51, 54, 56) and it further fail to teach that the decorrelating using correlator 51 the digitized signal by a code sequence. Given that fact, it would have

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been obvious to one skill in the art to incorporate such a teaching in Huang et al so as to ensure that the receiver is synchronize with the incoming signal so as to ensure accurate reconstruction of the transmitted signal.

as per claim 3, it would have been obvious to one skill in the art to configure Huang and Popovic in such a way for the subtracting to take place in the symbol rate so as to reduce system complexity.

As per claim 4, the interference of other signal components that the assigned signal component is reduced in all receiver fingers see fig. 3B, 164.

As per claim 5, it would have been obvious to one skill in the art to decorrelate the digitize signal with a complex conjugate pseudo noise code sequence so as to enhance signal detection.

As per claim 6, it is well known in the art to provide early- late timing detection in the sync stream Given that fact, it would have been obvious to one skill in the art to include such a device in Huang and Popovic in order to provide proper signal calibration.

As per claims 7 and 8, it would have been obvious to one skill in the art to determine the real part before /after step f) so as to satisfy system ' requirements.

As per claim 9, it would have been obvious to filter the reduced interference signal in order to remove any residual noise from the signal.

As per claim 10, it would have been obvious to one skill in the art to configure Huang and Popovic so that the steps e, f, and the filtering step provide code-tracking

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of the digital signal so as to ensure that receiver and transmitter are properly synchronize.

As per claim 11, it is well known in the art for code tracking to provide timing delay of the signal component assigned signal path so as to provide proper compensation to avoid any signal misalignment.

As per claim 12, Popovic teaches that the digitized signal is distributed to a first and second correlator 52 and 53. It would have been obvious to one skilled in the art to distribute the digitized signal in a first and second correlator and the motivation to do so would have been the same as provided in reference to claim 1 above.

As per claim 13, it would have been obvious to one skilled in the art to time shift the second signal prior feeding it to the second correlator so as to satisfy system requirements.

As per claim 14, it would have been obvious to one skilled in the art to generate a difference signal from the late and early estimates so that the system can be properly calibrated.

As per claim 15, it would have been obvious to one skilled in the art to multiply the difference signal with reconstructed so as to generate a signal resembling the original signal.

8. Claims 16 and 18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al Patent No. US 6,154,443 in view of Tran Patent No. US 6,269,075.

Huang et al discloses a method and apparatus comprising (a) receiving of an electromagnetic signal being a superposition of a plurality of signal components of different signal paths (i), see col.1, lines 22-29 and fig. 1B
(b) digitizing the received signal see A/D converter 46 (c) distributing the digitized signal to receiver fingers 50 each of which is assigned to one signal path; reducing the interference of at least one other than the signal component of the assigned signal path J with the signal component of the assigned signal path I in at least one of the receiver fingers see summer 124 and 166; calculating the interference contribution of finger J in finger I see summer 122 and 164 and subtracting the interference contribution of the at least one other finger from an intermediate signal.

however, Huang et al does not teach that the further limitations of determining a delay associated with the assigned signal path. In the same field of endeavor, Tran teaches the further limitations of determining a delay associated with the assigned signal path see col. 1, line64-col. 2., line 3. given that fact, it would have been obvious to one skill in the art to incorporate such a teaching in Huang in order to receive multipath signal having highest signal strength as taught by Tran see col. 2, lines 1-2.

As per claim 18, the interference reduce device is adapted to subtract the interference signal of at least one other signal component from the signal path of the assigned signal path see figs. 3A and 3B.

As per claim 19, Huang includes an A/D converter 46 upstream of the receiver fingers.

As per claim 20, it is well known in the art to provide early- late timing detection in the sync stream. Given that fact, it would have been obvious to one skill in the art to include such a device in Huang and Tran in order to provide proper signal calibration.

As per claim 21, it would have been obvious to one skill in the art to include a loop filter in Huang and Tran so as to remove noise from the input signal.

As per claim 22, it would have been obvious to one skill in the art to configure Huang and Tran the timing error and the loop filter as part of a code tracking loop so as to ensure that receiver and transmitter are properly synchronize.

As per claim 23, it would have been obvious to one skill in the art to adapt the code tracking loop to estimate a timing delay of the signal component in order to receive multipath signal having highest signal strength as taught by Tran see col. 2, lines 1-2.

As per claim 24, it would have been obvious to adapt the timing detector to provide pseudo noise decorrelation in order satisfy system requirement.

As per claim 25, the receiver is a DS-CDMA see Huang col. 3, line 17.

Allowable Subject Matter

9. Claim 2 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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10. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to claims 1, 3-16, 18-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Maxi-Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jean B Corrielus
Primary Examiner
Art Unit 2637 8/6/05